

Algebra 2/Trig1
Chapters 1-3 Review

Key

1. Given $g(x) = x^2 - 5x - 2$, determine $g(-2)$.

$$(-2)^2 - 5(-2) - 2 = 4 + 10 - 2 = 12$$

Solve the equation or inequality. Graph your solutions on a number line (if necessary).

2. $\frac{2}{3}x - 5 = 11$

$$\frac{2}{3}x = 16$$

$$x = 24$$

3. $|2x - 5| = 14$

$$2x - 5 = 14$$

$$2x = 19$$

$$x = 19/2$$

$$-(2x - 5) = 14$$

$$-2x + 5 = 14$$

$$-2x = 9$$

$$x = -9/2$$

4. $\left| \frac{1}{5}x - 2 \right| > 4$

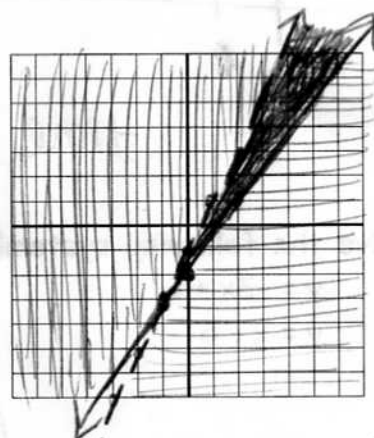
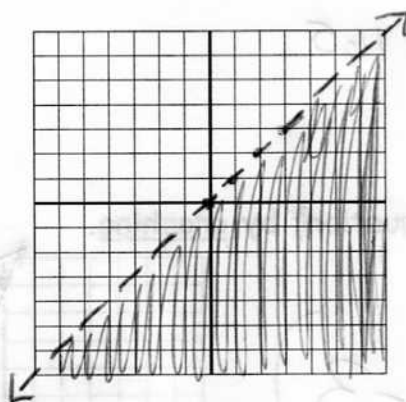
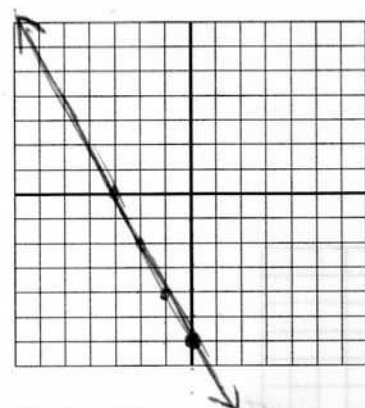
Graph the following.

5. $y = -2x - 6$

6. $y < x$

$$y < 1x + 0$$

7. $\begin{cases} y \geq \frac{3}{2}x - 2 \\ y < 2x - 1 \end{cases}$



Write the equation of the line with the given characteristics.

8. slope: 4, y-intercept: -3

$$y = mx + b$$

$$y = 4x - 3$$

9. through the points $(-2, 6)$ & $(3, 11)$

$$y - y_1 = m(x - x_1)$$

$$m = \frac{11 - 6}{3 - (-2)} = \frac{5}{5} = 1$$

$$y - 6 = 1(x - (-2))$$

$$y - 6 = x + 2$$

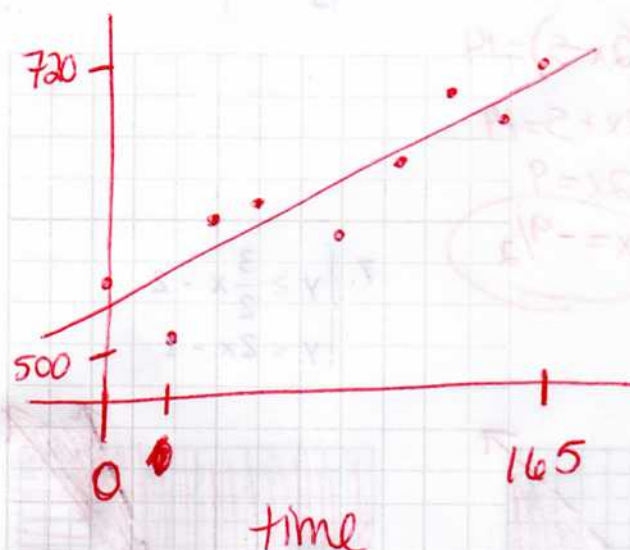
$$y = x + 8$$

10. The table below gives the amount of time in minutes spent studying for the SATs and the score on the verbal section. Make a scatter plot of the data and approximate a best-fit line.

Time Studying (min)	0	30	45	60	90	120	135	160	165
Verbal Score on SAT	560	500	610	620	590	650	700	670	720

a) Sketch of the scatterplot and line of best fit

b) Equation of Best Fit



$$y = 1.018x + 533.41$$

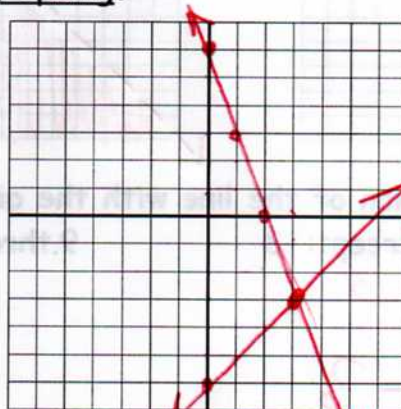
c) Correlation Value

$$r = 0.868$$

Solve the following systems of equations by graphing.

11. $y = -3x + 6$
 $y = x - 6$

$$(3, -3)$$



Solve the following systems of equations using any method possible.

12. $y = 2x + 1$
 $x + 4y = 22$

$$x + 4(2x + 1) = 22$$

$$x + 8x + 4 = 22$$

$$9x + 4 = 22$$

$$9x = 18$$

$$x = 2$$

$$y = 2(2) + 1$$

$$y = 5$$

$$(2, 5)$$

13. $\begin{cases} 5x + 3y = 5 \\ 2x - 4y = -3 \end{cases}$

$$20x + 12y = 20$$

$$6x - 12y = -9$$

$$26x = 11$$

$$x = \frac{11}{26}$$

$$5\left(\frac{11}{26}\right) + 3y = 5$$

$$\frac{55}{26} + 3y = 5$$

$$3y = \frac{75}{26}$$

$$y = \frac{25}{26}$$

$$\left(\frac{11}{26}, \frac{25}{26}\right)$$